



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT**

**DEPARTMENT OF LAND AND SPATIAL SCIENCES**

<b>QUALIFICATION(S):</b> BACHELOR OF PROPERTY STUDIES	
<b>QUALIFICATION(S) CODE:</b> 08BOPS	<b>NQF LEVEL:</b> 8
<b>COURSE CODE:</b> FMP812S	<b>COURSE NAME:</b> FACILITIES MANAGEMENT AND PROCUREMENT
<b>EXAMS SESSION:</b> NOVEMBER 2025	<b>PAPER:</b> THEORY
<b>DURATION:</b> 2 HOURS	<b>MARKS:</b> 100

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	MS ELINA TEODOL
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<b>INSTRUCTIONS</b>	
<ol style="list-style-type: none"><li>1. Read the entire question paper before answering the Questions.</li><li>2. Please write clearly and legibly!</li><li>3. Please <b>START EACH QUESTION ON A FRESH PAGE.</b></li><li>4. The question paper contains a total of <b>4 questions.</b></li><li>5. You must answer <b><u>ALL QUESTIONS.</u></b></li><li>6. Make sure your Student Number is on the EXAMINATION BOOK(S).</li></ol>	

**PERMISSIBLE MATERIALS**

1. Non-programmable Scientific Calculator

**THIS QUESTION PAPER CONSISTS OF 6 PAGES** (Including this front page)

**Question 1**

For each of the following statements indicate whether it is 'TRUE' or 'FALSE'. Each correct answer carries 1 mark.

- 1.1 Facilities Management integrates people, place, process, and technology to ensure functionality, comfort, safety, and efficiency.
- 1.2 Building maintenance is not a key function of Facilities Management.
- 1.3 Effective procurement in Facilities Management ensures operational continuity by avoiding disruptions to core business activities.
- 1.4 The Facilities Management brief communicates financial returns to investors.
- 1.5 Health Safety Environment (HSE) compliance is irrelevant to Facilities Management functions.
- 1.6 Contract management in Facilities Management includes vendor selection but not risk mitigation.
- 1.7 Space consolidation is a strategy to address high vacancy rates.
- 1.8 Asset life-cycle planning in Facilities Management starts from design and ends at disposal.
- 1.9 Cost management in procurement optimises spending through competitive bidding.
- 1.10 Real estate management in Facilities Management excludes property leasing.
- 1.11 A firm-fixed price contract allows adjustments based on inflation.
- 1.12 Predictive maintenance is always done after failure.
- 1.13 Maintenance management includes preventive but not corrective maintenance.
- 1.14 Financial and performance management in Facilities Management involves KPI tracking.

- 1.15 Space audits derive utilisation tracking in occupancy management.
- 1.16 A high booking rate with low usage indicates scheduling inefficiencies.
- 1.17 Asset management tracks equipment lifecycle and depreciation.
- 1.18 Building Management Systems (BMS) are unrelated to Facilities Management automation.
- 1.19 Procurement reduces operational risks through proper vendor selection.
- 1.20 Utility management is a key Facilities Management function.
- 1.21 Rent collection strategies include incentive programs such as early payment discounts.
- 1.22 Outsourcing specialised services, like fire safety systems, is an example of Total Facilities Management.
- 1.23 Cost Plus Incentive Fee contracts reimburse allowable costs and include performance incentives.
- 1.24 Occupancy density measures the sqm/person or workstation.
- 1.25 Procurement ensures resources are available at the right time and cost.

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## **Question 2**

Provide brief answers to the following questions:

- 2.1 Compare and contrast Facilities Management and Property Management (4)
- 2.2 What is occupancy management? (2)
- 2.3 Mention any two (2) hard Facilities Management services and two (2) soft Facilities Management services. (4)
- 2.4 Explain the importance of vendor relationships in Facilities Management procurement. (1)

- 2.5 List three (3) objectives of procurement in Facilities Management. (3)
- 2.6 Differentiate between preventive and reactive maintenance. (2)
- 2.7 What is a Building Management System (BMS)? (3)
- 2.8 What is the key difference between a fixed-price contract and a cost-reimbursement contract? (3)
- 2.9 What are the four stages of the procurement lifecycle? (4)
- 2.10 Discuss the advantages and disadvantages of outsourcing maintenance work. (6)
- 2.11 Explain the difference between open tendering and selective tendering. (4)

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### Question 3

Answer the following questions based on the provided scenarios:

- 3.1 Energy Management (5)  
A conventional office building consumes 1,200,000 kWh of electricity per year. A new, energy-efficient building of the same size consumes 800,000 kWh per year. Calculate the percentage energy savings of the new building compared to the conventional building.
- 3.2 Space Audit (5)  
A university lecture hall has a total area of 150 square meters and is designed to accommodate 100 students. On average, the lecture hall is occupied by 60 students. Each student requires 1.5 square meters of space. Calculate the Space Utilization Rate (SUR) of the lecture hall based on the average occupancy.

## 3.3 Lighting Upgrade (5)

An office building's lighting system consumed 150,000 kWh/year before an LED upgrade. After the upgrade, the consumption dropped to 90,000 kWh/year. Calculate the percentage reduction in energy consumption for lighting.

## 3.4 Water Management (5)

A conventional building uses 600,000 litres of water per year. A new building with a rainwater harvesting system uses 350,000 litres of municipal water and 250,000 litres of harvested rainwater per year. Calculate the percentage of water saved by the new building compared to the conventional building.

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#### Question 4

Read each case study carefully and answer all the questions.

4.1 A university decided to outsource its HVAC (heating, ventilation, and air conditioning) maintenance to a third-party provider in an effort to reduce costs. The university was able to achieve a 15% cost reduction in the first year. However, during the same period, student complaints about temperature issues in the dormitories and classrooms increased by 30%. The outsourcing provider was meeting the technical requirements of the contract, but their response times were slower than the in-house team they had replaced.

a) What could the university have done differently in the contracting process to avoid this situation? (4)

b) How could the university work with the outsourcing provider to improve response times and Student satisfaction? (3)

4.2 A corporate office building was struggling with frequent and costly equipment failures. An analysis of the maintenance budget revealed that 90% of the funds were being spent on reactive repairs, with only 10% allocated to preventive maintenance. This reactive approach to maintenance was not only expensive but also resulted in significant disruption to the building's occupants.

- a) What are the long-term consequences of underfunding preventive maintenance? (3)
- b) How could the facilities manager make a case to senior management for increasing the preventive maintenance budget? (3)

4.3 A facilities manager was overseeing a major renovation project in a corporate office building. The project was proceeding on schedule and within budget until the contractor submitted a change order for an additional N\$50,000. The contractor claimed that they had encountered "unforeseen conditions" behind a wall that were not covered in the original contract. The facilities manager disputed the charge, arguing that the contractor should have anticipated such conditions.

- a) How could the contract have been written to better protect the facilities manager from this type of dispute? (3)
- b) What steps should the facilities manager take to resolve this dispute with the contractor? (3)

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